



# **Traffic Services Study Discussion Paper**

July 2000



**BRITISH  
COLUMBIA**

**Ministry of Attorney General**  
Public Safety and Regulatory Branch  
Police Services Division

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## **A. Introduction**

In 1998, 2,927 people were killed on Canadian roads and another 150,919 injured. In the same year, 418 people were killed in motor vehicle crashes in B.C. and 59,459 injured.

Six times as many people die in traffic collisions in Canada than are murdered each year, impaired driving is the leading criminal cause of death. Traffic crashes are the leading cause of death for Canadians under 24.

Provincial and local governments invest a great deal of valuable police time and money in traffic services, and ICBC supports enhanced enforcement as part of its strategic plan to make roads safer and keep automobile insurance affordable.

The cost of collisions is extremely high. In B.C. alone, the total cost of traffic collisions in 1998 exceeded \$2 billion -- \$90 million for fatal crashes, \$1.1 billion for injury crashes and \$373 million for material damage only crashes. The personal toll when family and friends are killed or seriously injured cannot be measured.

B.C. police investigation reports from 1998 indicated alcohol was involved in almost a third of all fatal collisions and 12 per cent of collisions resulting in injury. Unsafe speed was a major contributing factor in a third of the fatal and 16 per cent of the injury crashes. There were 88 fatal and more than 8,000 injury crashes at intersections.

The police reports also showed that close to 80 per cent of drivers who were not wearing seat belts and were involved in crashes were injured or killed. In comparison, 50 per cent of those involved in a crash who were properly restrained were injured or killed.

The question we, as British Columbians, need to answer is "Are we willing to accept this level of death and injury on our roads and, if not, what can we do about it?"

This question needs to be asked with the understanding that motor vehicle crashes are rarely 'accidents' – most are caused by human error and too often the worst collisions involve unsafe speed or impaired drivers. The goal of traffic law enforcement is to prevent crashes or reduce their severity, making communities safer.

The Ministry of Attorney General, police and ICBC have a common interest in making sure traffic services are delivered as effectively and efficiently as possible. In November 1999, former Attorney General Ujjal Dosanjh announced a review of the delivery of traffic services to be conducted by the director of Police Services under the *Police Act*.

The goal of the study is to improve public and community safety by reducing the number of injuries and fatalities on B.C.'s roads and highways.

Its objectives are to:

- assess the efficiency and effectiveness of current traffic service delivery, including photo radar, red-light cameras and programs such as Enhanced CounterAttack and the Targeted Traffic Enforcement Partnership;
- determine whether the focus is on the right objectives;
- determine whether resources are aligned to meet these objectives;
- identify best practices and opportunities for improvement; and
- develop performance measures.

This discussion paper was developed from study findings to date (see Appendix 1 for information on the activities). Its purpose is to raise issues around the effectiveness of police traffic enforcement. Views and comments will be considered as part of the study's detailed analysis of ways to improve traffic services in British Columbia.

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Provide written comments to the **Traffic Services Study**  
by Aug. 18, 2000 to:

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For further information, call (250) 387-0118 in Victoria.

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## **B. Background**

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### ***Why are police enforcing traffic laws in B.C.?***

Traffic laws are no different than any other law and police enforce traffic laws for the same reason they enforce any other law – to protect people and communities. Enforcement saves lives and reduces the personal and financial toll associated with motor vehicle crashes.

A visible police presence and expectation of penalties is key to changing driver behaviour. Drivers do not expect they will be involved in a collision so they are more likely to change their behaviour to avoid a ticket or a charge than to avoid a crash.

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### ***How are traffic services currently delivered in B.C.?***

In 1998, police agencies reported 707 authorized traffic positions, as follows:

- 364 positions in 124 RCMP provincial detachments, delivered by 17 highway patrols and the Integrated Traffic Camera Unit, a specialized unit responsible for B.C.'s photo radar and red-light camera programs.
- 214 positions in 59 RCMP municipal detachments.
- 129 positions in seven of the 12 independent municipal departments<sup>1</sup>

Almost 100 of the 707 authorized positions were vacant. By comparison, there were 2,872 authorized uniform patrol positions in B.C. in 1998 and 383 were vacant.

In addition to dedicated traffic units, every general duty/patrol officer is expected to deliver traffic services, and there are other organizations involved with traffic services including ICBC commercial vehicle inspectors, railway and military police.

The federal and provincial governments share the cost of provincial RCMP detachments and contribute to the cost of municipal RCMP. Municipalities are responsible for the total cost of the 12 independent municipal departments.

In 1998, the provincial budget for RCMP traffic services was \$29 million, local governments spent \$36 million and ICBC contributed \$23 million.

ICBC supports traffic services on a year-to-year basis by providing overtime for enhanced enforcement, paying for new equipment and contributing to the photo radar and red-light camera programs. The

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<sup>1</sup> Port Moody, Oak Bay, Esquimalt, Nelson and Central Saanich police departments do not have dedicated traffic units.

Ministry of Attorney General and ICBC are currently exploring the potential for a multi-year funding strategy to deliver road safety enforcement. The Traffic Services Study will help shape this future direction to ensure that the most effective programs are supported.

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***Should traffic service delivery be a priority?***

Retired RCMP Deputy Commissioner Roy Berlinquette, former co-chair of the Canadian Association of Chiefs of Police Traffic Committee, recently predicted that re-establishing the national priority for traffic services would reduce health care costs associated with deaths, injuries and long-term disabilities and support a stronger community-based policing philosophy.

In B.C., both the public and police believe traffic services are important to public safety. In a police survey conducted for the study, more than two-thirds of the respondents said there would be a major impact on safety if police stopped enforcing traffic laws. A provincewide public opinion poll found that three-quarters of the people surveyed believed there would be more deaths and injuries on B.C.'s roads if police reduced traffic law enforcement.<sup>2</sup>

The public poll asked respondents to rank a number of police enforcement priorities. Impaired driving topped the list, higher than investigating assault or break and enter, and three-quarters of those asked rated it as a very high enforcement priority.

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***What are the key public safety concerns?***

Based on a review of police collision investigation reports, stakeholder consultation and other research, the Traffic Services Study has identified four priority areas for attention:

- impaired driving
- speeding
- intersections
- seat belts/occupant restraints

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***Is enforcement focusing on the key public safety concerns?***

Traffic is a vital element of community safety yet traffic services do not benefit from the same level of police commitment, community involvement and problem solving used for other law enforcement activities.

Problem solving is the most critical component in quality traffic service delivery. If police and their community partners do not have

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<sup>2</sup> See Appendix 1 for further information about the police and public surveys.

the resources to identify priorities, traffic services can end up being reactive rather than proactive and strategic. The risk is that police will invest more time on less important issues and not be able to solve the serious crash problems that would likely yield greater public safety benefits.

To make the best use of equipment and personnel, it is essential to understand where the crashes are occurring in their jurisdiction, why, when and how. In southern Alberta, RCMP 'K' Division recently discovered that police were concentrating on speed when a closer look found major causes of crashes were impaired driving and drivers not stopping at stop signs, and the resulting injuries were more serious because vehicle occupants were not wearing seat belts.

In B.C., police issue far more violation tickets for speeding than any other offence. Speed was identified as a contributing factor in one third of the fatal crashes in B.C. in 1998, but other high-risk behaviours may be just as important or more important – such as impaired driving, driver inattention, following too closely, improper lane changes and occupant restraints. How people are being killed in crashes needs to be examined and police priorities and resources aligned to respond appropriately.

Laws related to occupant restraints present a clear example. Seat belts are the single most effective traffic safety device available, yet the study's perception survey found that half the police who responded did not view occupant restraints as an important enforcement activity. Police are more likely to issue a ticket for speeding than for failing to wear a seat belt.

Information that focuses on the community is also important. National or provincial statistics are useful, but local information is essential to attract community attention and involvement. And a community is more than residents of a geographical area – traffic services affect all users of local roads or highways.

B.C. needs a provincial strategy that provides the data and the strategic advice from a provincial position and supports police so they can work with their communities to identify the key public safety concerns and respond to them.

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***Is enforcement being delivered effectively and efficiently?***

Generally, local police agencies do not have timely, accurate data and the resources needed to analyze the cause of crashes for an appropriate response. This starts at the roadside with the fact that police cannot always attend crashes and when they do attend the resulting investigation reports may not be as thorough as required. Without this data, police management cannot deploy resources strategically to make their communities safer.

Police agencies view traffic services as a support function. When resources are limited and there are demands in other areas, traffic becomes part of a resource pool where officers are called on to perform other duties – both temporarily and permanently.

If traffic officers are not invited to solve traffic problems, their positions become less challenging than other police duties and the career path may be limited. This can be compounded if training opportunities are not provided and traffic officers are constantly seconded to take on other responsibilities.

Some police agencies are using the enhanced enforcement programs supported by ICBC to deliver regular traffic enforcement, which means the benefits of increased visibility are lost and routine traffic duties are being delivered on overtime.

Most police agencies in B.C. do not appear to have the tools they need to deliver traffic services as effectively and efficiently as possible. In fact, it appears that traffic services to a large degree have been eroded. As demands for police services continue to grow these resources will continue to be strained. Police agencies need to be confident that they are solving the most serious traffic problems and, as a result, achieving the greatest value for the resources being invested.



## C. Public Safety Concerns

### C1 IMPAIRED DRIVING

In 1998, alcohol was involved in almost a third of all the fatal collisions in B.C. and 12 per cent of collisions resulting in injury.

While a lot has been done – through both public education and enforcement – to discourage drinking and driving, it continues to be a serious concern.

In 1998, B.C. police issued more than 44,000 24-hour prohibitions and more than 7,600 Administrative Driving Prohibitions, and submitted 9,200 Reports to Crown counsel related to impaired driving.

Public view:	Police view:
91 per cent believe impaired driving is a high or very high priority for traffic enforcement; 20 per cent consider it is the most important traffic issue facing B.C.	91 per cent consider impaired driving is a high or very high priority for traffic enforcement.

#### Impaired Driving Sanctions

Police can use a variety of measures in dealing with impaired drivers.

Under the *Criminal Code*, police can submit a **Report to Crown Counsel** (RCC) proposing that an individual be charged with:

- physical signs of impairment;
- driving with a blood alcohol content over .08mg/ml; or
- failure or refusal to provide a breath or blood sample.

If the driver is convicted, the penalty is an automatic one-year licence prohibition imposed by the B.C. Superintendent of Motor Vehicles.

Police can also issue a driver who fails or refuses to take a breath or blood alcohol test with an **Administrative Driving Prohibition (ADP)**. An ADP is an administrative sanction separate from the criminal sanction that prohibits a driver from driving for 90 days.

In addition to submitting an RCC and/or issuing an ADP, police can issue a **24-Hour Driving Prohibition** under section 215 of the provincial *Motor Vehicle Act* if the officer believes the driver's ability to drive has been affected by alcohol or drugs.





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Under the province's Graduated Licensing Program, police can issue a new driver a **12-Hour Licence Suspension** if the officer suspects the new driver has consumed alcohol. This may be in addition to any other driving sanction such as an ADP or a criminal driving charge.

To substantiate a charge of driving with a blood alcohol content over .08mg/ml, police must obtain a blood alcohol reading from the driver from an approved breath analysis instrument, also known as a breathalyzer. Most often, police use a hand-held approved screening device to measure the amount of alcohol in an individual's blood at the roadside. The evidence can currently be used only to support a 24-hour driving prohibition.

## **Enhanced CounterAttack**

CounterAttack started in B.C. in December 1977 as a holiday season campaign to inform the public about the dangers of impaired driving and to support highly visible police enforcement. In 1985, CounterAttack was expanded to include a one-week spring campaign and special enforcement campaigns through the year on long weekends or during school graduation periods. Police agencies participated in the campaigns using their existing resources.

An Enhanced CounterAttack Program began in 1995 with ICBC paying police overtime to provide additional roadchecks from July to December, with advertising support in targeted regions.

An ICBC evaluation found that the combination of enforcement and public education helped dissuade people from driving after drinking alcohol. It also found the number of alcohol-related crashes dropped when 20 per cent of the population reported encountering a CounterAttack roadcheck. Conversely, in areas where the enhanced program was not being used, this drop was not observed. The 20-per-cent visibility figure subsequently became a benchmark target for Enhanced CounterAttack.

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***Is CounterAttack the best strategy to deter impaired driving?  
Are there other ways police can reduce the number of crashes  
involving impaired drivers?***

### **Enforcement**

Even though a breathalyzer can produce results in less than a minute, the actual process for obtaining a breath or blood alcohol reading when an impaired driver is apprehended can take much longer and one or more officers may be off the road for an extended length of time. When resources are limited, unless an individual is grossly impaired or was involved in a collision, police are often reluctant to take a driver back to a police detachment or station to obtain a blood alcohol reading.

More than 60 per cent of police who responded to the study's survey stated that impaired driving charges take too long to process, and close to half said they do not have enough on-duty staff to process an impaired driver.

Many traffic officers believe drivers charged under the *Criminal Code* are more likely to plead guilty to a lesser offence or be found not guilty of a Criminal Code offence. This can affect how police enforce impaired driving offences: rather than processing an individual for impaired driving, they are more likely to issue a 24-hour prohibition to get the driver off the road.

A relatively small group of hard-core offenders accounts for much of the drinking and driving problem. Unless they expect to be apprehended, there is little motivation for hard-core offenders to change their behaviour. Habitual or hard-core offenders have been known to take measures to avoid detection, such as driving on less-travelled roads. While high visibility is important for CounterAttack, randomly operating regular CounterAttack roadchecks on less-travelled routes might increase the general risk of apprehension for all drivers.

## **Sanctions**

Research indicates that the most effective sanctions to prevent impaired driving need to be swift, severe and certain. However, both police and the public lack confidence in how the judicial system deals with impaired driving and there is some evidence to support this perception.

Under the *Criminal Code*, a mandatory driving prohibition is imposed for impaired driving offences, but not until the time of conviction. If offenders can arrange to have trial dates postponed repeatedly, they can defer sanctions until months after the offence. Cases are lost on marginal, legal or technical grounds. As a result, the lengthy delay between the offence and the sanction, and the uncertainty of conviction can weaken the effectiveness of the sanctions.

Impaired driving defences can be very technical and many defence lawyers specialize in this area. Crown counsel may not always have the time or expertise to research the continually evolving case law. As a result, in some cases, Crown counsel may stay criminal charges or reduce the criminal charge to a provincial offence such as driving without due care to ensure convictions.

In an effort to enhance existing sanctions against drinking drivers and to provide a swift deterrent, the province introduced new legislation in May 1997 that allows the police to issue an administrative driving prohibition (ADP). However, ADPs are not being fully utilized as a sanction as they are tied to a breath test analysis. Rarely will police issue an ADP unless the officer is processing the driver to prepare a Report to Crown Counsel.

Enhanced CounterAttack has proven to be an effective program to discourage and enforce impaired driving resulting from alcohol use.

However, it has not been able to respond as well where drivers are impaired by drugs, including prescription drugs. Police officers may require further training to detect drivers impaired by substances other than alcohol, and the general public may need more information about the risks of driving after taking medication.

### ***Other Jurisdictions***

#### **Canada**

Ontario ties restoration of driving privileges to a remedial measures program. First-time offenders must take a course on impaired driving at their own expense. Third-time offenders lose their driving privileges for a minimum of 10 years. Privileges are restored only if the offender satisfies certain conditions, including the installation of an alcohol interlock system in their vehicle.

#### **Europe**

In Germany, repeat offenders are forced to undergo a mandatory psycho-medical evaluation. If it reveals evidence of alcoholism, the driver remains disqualified from driving until a medical assertion affirms that there is no longer a tendency to abuse alcohol. In this way the relicensing of repeat offenders is tied directly to rehabilitation.

As part of its Vision Zero Program to eliminate all deaths on Swedish roads, the Swedish Parliament has encouraged automobile manufacturers to explore the installation of alcohol interlocks on all future vehicles. Taking a market-oriented approach, the government also hopes that consumer demand for voluntary alcohol interlocks can be stimulated by reduced insurance rates for automobiles equipped with the devices.

In the Netherlands there are no specific traffic units so Dutch authorities have proposed pooling resources to create regional "flying alcohol squads". Each police unit would contribute the equivalent of one day of police capacity per week to a regional force to allow enforcement locations throughout the region. This would increase public perceptions of randomness.

In Scotland, motorists can call a highly publicized and traffic specific Crimestoppers hotline to report suspected impaired drivers. Police are then dispatched to investigate.

#### **Australia**

Victoria, which has the best road safety record in the developed world (1.4 deaths annually per 10,000 vehicles) according to the state's Transport Accident Commission, attributes its success to a co-ordinated effort of enforcement and education. Random Breath Testing, when combined with extensive publicity, has proven to be an effective strategy in combating impaired driving.

### ***Analysis***

While there has been a levelling in the number of driving while impaired Criminal Code charges in B.C. and an increase in the number of impaired driving charges that have been reduced to lesser offences, this does not necessarily mean there has been a decrease in impaired driving. In the last 10 years, the number of 24-hour prohibitions has been steadily increasing.

To deal with impaired driving more effectively, a number of actions could be considered with respect to legislation, equipment, training, education and the judicial process.

Roadside screening devices, combined with lower thresholds, could be used to improve the use of administrative driving prohibitions. If the required threshold was lowered to .05 % from .08 % and officers were authorized to use an approved roadside-screening device to initiate an ADP, it might well be used more. Alternatively, the legislative implications of allowing police to issue an ADP where a driver shows signs of physical impairment could also be considered.

Efficiency would also be improved through the acquisition of new technology that will enable the processing of impaired drivers at the roadside or with only one officer.

The overall efficacy of Enhanced CounterAttack could be improved by training police officers better and raising their awareness of the importance of charging impaired drivers. Making greater use of Standard Field Sobriety Testing and Drug Recognition Testing are two ways to achieve this.

Several steps could also be taken to help bolster both police and public confidence in the court system. Research could be undertaken to determine the extent to which charges are being reduced or stayed and analyze the conviction rate for driving while impaired offences. The use of specialized Crown counsel for impaired driving cases could be explored as well as ongoing training seminars for both Crown and police.





## **C2 SPEED ENFORCEMENT**

In 1998, unsafe speed was cited as a major contributing factor in one third of all fatal crashes in B.C. and 16 per cent of all injury crashes.

Police can enforce speed with violation tickets, written warnings or verbal warnings, or they can charge a driver under the *Criminal Code* for dangerous driving. Speed enforcement is most effective if drivers expect to be ticketed for exceeding the posted limit, and if there is enough enforcement to reinforce this expectation. In 1998, police in B.C. issued more than 300,000 violation tickets for speeding and another 292,000 tickets were generated through photo radar enforcement.

<b>Public view:</b>  One-fifth feel speeding was the most important traffic safety issue facing B.C. today.	<b>Police view:</b>  One quarter say speeding enforcement is a high or very high priority.
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Speed enforcement uses both visible and concealed operations. Visible enforcement encourages drivers to slow down in a high-crash area when they spot a police vehicle or photo radar van. Concealed enforcement provides a more general deterrent because drivers never know when it is in effect.

Current strategies police use to respond to speed include conventional enforcement such as radar and laser technology, photo radar, and an enhanced enforcement program known as the Targeted Traffic Enforcement Partnership.

There are also community partnerships such as Speed Watch and highway watch programs. Through Speed Watch, police train volunteers who use portable radar equipment and electronic speed reader boards provided by ICBC to advise drivers whether they are observing the posted speed limit in areas of concern such as playground or school zones. Highway Watch, which began with Watch 17 on the Patricia Bay Highway north of Victoria, is used in a number of areas in the province. It allows drivers to phone a number to report bad driving so police can send a warning letter to the registered owner of the vehicle.

Both police and the public have a tendency to underestimate the impact of speed on road safety. Most drivers speed, at least on occasion, and many are under the impression that the "true" speed limit in B.C. is 10 km/h over the actual posted limit. This is reinforced when police officers use their discretion, issuing tickets for only higher speed offences only. The relationship between speed as a significant cause of crashes and its impact on the severity of crashes needs to be better understood.

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## **Conventional Enforcement**

Radar has been used for speed enforcement for decades and systems available today are very sophisticated. Radar can be stationary or in a moving police vehicle. There is a multi-directional unit that can be stationary or mobile and can monitor the speeds of vehicles travelling both toward and away from a police vehicle.

Radar, however, is not lane or target selective and cannot identify the direction the vehicle is travelling. As a result, operators must use their experience to confirm the reading displayed on the unit. In other words, the radar unit only corroborates the speed; the operator determines all other factors.

With laser technology, the infrared beam remains narrow so the operator can single out one violating vehicle in a particular lane of traffic, making it effective in heavy traffic conditions. Laser technology is accurate to within two kilometres an hour and laser units can determine the distance between two moving vehicles to support a charge of following too closely. Laser technology is not affected by radar jammers and cannot be picked up by radar detectors; however, laser jammers can obstruct police enforcement efforts.

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### ***Does enforcement focus too much on speed?***

## **Speed and Aggressive Driving**

Speed is just one element of aggressive driving and may be indicative of other high-risk behaviours. Police often focus on speed enforcement because it is easier to detect speeders, process a speeding ticket and defend it in court if it is challenged.

Laser technology can support police issuing a violation ticket for following too closely, but operators must be trained to handle the equipment and to collect the technical evidence needed to support any court challenge. Other charges such as unsafe lane changes or intersection violations are also more difficult to enforce and defend.

When B.C. police and ICBC introduced enhanced corridor enforcement in 1995, it was identified as a speed enforcement program. The program has since widened its focus; police agencies are identifying and targeting the other high-risk behaviours that are known to be leading to serious crashes on specific highway or municipal corridors.

Police have a number of options to address a specific speed problem. For example, Speed Watch may be an effective way to remind drivers to slow down in a playground zone, while photo radar may be the safest and most effective response to speed at a high-crash location on a busy highway. By

taking a problem-solving approach that demands a closer look at what is causing serious crashes, enforcement strategies can be adapted to address specific problems.

A problem-solving approach might also allow managers to base police performance on results achieved, such as fewer crashes or fewer infractions, as opposed to the number of violation tickets issued. Police managers often use the number of violation tickets issued as a performance measure of what officers are achieving so it is not surprising that the number of speed-related tickets far surpass all other violation tickets.

### ***Other Jurisdictions***

#### **United States**

New Jersey began an enforcement and public awareness program in April 1997 to target aggressive drivers. The enforcement included marked and unmarked vehicles, stationary and mobile radar to enforce speed limits and roving checkpoints to detect impaired drivers. The cooperative effort involved state, county and municipal enforcement agencies, and also included a #77 cellular and 1-888-SAF-ROAD hotline numbers. During a nine-month period in 1997, there was an 18-per-cent drop in highway fatalities in the six-county area where the patrols were concentrated.

Maryland State Police, early in 1997, began the aggressive driver imaging and enforcement (ADIE) program, involving a media campaign and use of a system that integrates video, speed and distance recording technology with an interactive computer system. The ADIE system is installed in an enforcement vehicle and operated by one police officer. It captures images of vehicle tag numbers, the vehicle path and speed – owners of violating vehicles receive a warning in the mail. An evaluation showed the ADIE program created a perception of increased enforcement and led to a reduction in speeds. However, there is more work needed to improve the reliability of the equipment.

In Florida, the St. Petersburg Police Department developed *Where's Jockers?* A police officer dresses like a city worker and travels in city equipment ranging from lawn mowers to bucket trucks and watches for speeding, stop sign or signal light violators.

In South Carolina, the Greer Police Department began an education program in early 1997 to make both the public and police officers aware of the importance of obeying traffic laws and reducing crashes. Education efforts were supplemented by enforcement. In the first seven months of the program, the number of crashes dropped 22 per cent as compared with the same period in the previous year.

In Texas, the cities of Arlington and Fort Worth began targeting aggressive drivers in late 1997 with a goal of reducing crashes and injuries. Patrol

officers were encouraged to become more involved in traffic enforcement, especially aggressive driving enforcement. Citizens were invited to report aggressive drivers and police followed up with a letter or investigation.

#### **Israel**

In Israel, traffic sensors are combined with a vehicle database to detect vehicles that are speeding or following too closely and a ticket is issued by mail within three days of the offence. The sensors work 24-hours a day, are portable or stationary and cannot be picked up by radar detectors. At some locations, the detector sends information to a police officer who waits about 500 metres past the camera and can pull offenders over.

#### **Analysis**

A focus on speed enforcement that excludes or ignores other dangerous driving actions may not be the most effective way to deliver traffic services and improve community safety.

A problem-solving approach to traffic enforcement may assist in developing the appropriate enforcement strategy to address a specific problem. For example, if crashes are occurring at intersections, it may be most effective to install a red-light camera or set up regular intersection enforcement. On the other hand, a closer review may show that addressing a speed problem will clear up other aggressive driving actions or it may show that another approach is needed instead of or in addition to speed enforcement.

However, there is no doubt that speed is often the root cause of other aggressive driving behaviours such as following too closely, unsafe lane changes or running red lights therefore speed enforcement will always be needed. Visible enforcement is likely to lead to more voluntary compliance with other traffic laws, and conventional speed enforcement means police may stop a vehicle where the driver is impaired or vehicle occupants may not be using occupant restraints.

#### **Enhanced Enforcement**

In the fall of 1995, local RCMP detachments teamed up with ICBC to address speeding on the Sea to Sky Highway between Pemberton and Whistler. ICBC paid for police overtime to enhance the detachment's base enforcement and increase both visibility and enforcement. The aim was to reduce the number of speed-related collisions and the mean speed on the highway. After two months, the crash rate and mean speed were compared to the same period the previous year and showed a 24-per-cent drop in crashes and 5.3 km/h decrease in mean speed.

A similar program was introduced in the Fraser Valley the following spring and in 1997, the Ministry of Attorney General and communities along 10 high-crash highway corridors joined with the RCMP and ICBC in the

Enhanced Corridor Enforcement Program. The program has continued to grow each year and municipal departments have now joined.

In 1999, the Enhanced Corridor Enforcement Program was renamed Targeted Traffic Enforcement Partnership (TTEP) and its focus was expanded to include all aggressive driving violations. It continues to operate on an overtime basis.

Through TTEP, police agencies agree to maintain regular base traffic enforcement on a specific segment of highway or major municipal artery. This allows the program to achieve its goal of increasing police enforcement and visibility in high-collision areas.

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***Is there a better way to increase enforcement and police visibility without relying on police overtime?***

### **Base Enforcement versus Overtime**

When enhanced enforcement began, police officers were keen to work overtime. Since then, some of the enthusiasm has faded, with more officers preferring time off to overtime duty. In some detachments or departments, officers may work an overtime shift then take leave or call in sick on their regular shift. As a result, police managers may find their resources stretched and it may impact their ability to maintain the base enforcement. However, if base enforcement is not maintained, the benefits of the enhanced program are eroded. TTEP has been cancelled in a few cases where base enforcement was not maintained.

In 1998, officers in the 46 police agencies involved in the enhanced program wrote one-fifth of all the speeding tickets issued in the province while they were on overtime. While the program targets problem corridors it might be expected that the number of tickets would be high, this figure suggests that police are delivering too much of their traffic services through the enhanced overtime enforcement.

### ***Other Jurisdictions***

#### **Canada**

The Ontario Provincial Police (OPP) developed a full-time traffic program called the OPP Rangers in 1995 to enhance enforcement on provincial highways in the Toronto area. There are five special enforcement units, each with nine highly motivated traffic officers who must be recommended for the position. All the Rangers have their own vehicles, are on the road during peak times and enforce traffic laws travelling to and from home. They are separate from the local OPP detachment. This highly publicized program has a waiting list of officers who want to participate.

The OPP are currently reviewing the results of the enforcement.

#### **United States**

In the Washington, D.C., metropolitan area, the Smooth Operator Program uses coordinated enforcement waves four times a year to deter aggressive driving and reduce crashes. The U.S. Department of Transportation provides funds for overtime, equipment and advertising so 26 law enforcement agencies from Maryland, Virginia and Washington, D.C., can target aggressive drivers in their jurisdiction, share media exposure and provide a unified voice about traffic safety. Each wave of enforcement lasts about a week, which helps maintain officer enthusiasm. Police have just begun to analyze the program's effect on the crash rate.

Pennsylvania state police has two programs to address aggressive driving enforcement:

- Operation Centipede uses eight to 10 officers who are positioned two miles (3.2 kilometres) apart, using marked and unmarked vehicles, and strictly enforce all aggressive driving, with an emphasis on speeding. Drivers who pass the first officer are surprised when they encounter a second officer a short distance down the road. The impression is left that officers will be found along the entire route.
- TAG-D uses a variety of enforcement methods (marked and unmarked vehicles, a vehicle that appears to be disabled, radar and aircraft) and targets specific aggressive driving behaviours on the day of the saturation patrol effort.

Police units receive overtime funds for both programs from the state, based on how many regular hours of enforcement they deliver. Since the programs began in 1997, the number of fatal and serious injury crashes in areas targeted has dropped by nearly 24 per cent. Local police adjust the enforcement locations according to their collision statistics.

#### ***Analysis***

Increased enforcement and police visibility can change driver behaviour along high-crash corridors. This means that TTEP achieves its goal only if police maintain base enforcement activities. It is of little value if it replaces existing enforcement levels. The question that needs to be asked is whether there are acceptable alternatives for maintaining a high level of enforcement activity without relying on overtime.

TTEP requires that a local police manager prepare an operational plan that identifies the locations, causes and the time and day of week of crashes. By shifting to an enhanced full-time police complement, some of the issues associated with voluntary TTEP overtime commitments could be eliminated. However, the lack of full-time police positions and a shortage of equipment may limit this approach, unless these deficiencies are addressed.



## **Photo Radar**

British Columbia introduced 30 photo radar vans in 1996 in response to unsafe speeds being a significant contributing factor in police-reported collisions.

Speed monitoring cameras monitor every passing vehicle and photograph every vehicle travelling above a selected threshold speed. Conventional enforcement does not have as wide an impact as police officers can only stop one speeding vehicle at a time, leaving other speeding vehicles to pass by unaffected.

The goal of the Photo Radar Program is to reduce traffic speed and thereby reduce the number and severity of speed-related crashes in B.C. The program aims to accomplish this through general deterrence (the perceived threat of getting a speeding ticket through visible enforcement) and through specific deterrence (punishment in the form of a speeding ticket and the related fine).

The program operates where a community has identified a crash problem or a significant concern about speeding. Statistics show photo radar has reduced speeds at deployment sites but has had less effect on general speeding provincewide.

The deployment of photo radar is a responsibility of the Integrated Traffic Camera Unit (ITCU), a specialized traffic enforcement unit in Richmond under the direction of an RCMP inspector. There are regional offices in Victoria, Richmond, Kamloops and Prince George, and satellite offices in Nelson and Cranbrook.

In 1998, the ITCU staff included 109 police officers seconded from the RCMP or municipal departments, seven federal public servants, 17 charging officers who are staff of the Ministry of Attorney General and 30 civilian staff. ICBC is responsible for all costs associated with the operation of photo radar.

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***Is photo radar an effective part of B.C.'s overall traffic enforcement strategy?***

### **Overt versus Covert Operation**

Currently, the Photo Radar Program operates in an overt manner. This means that the cameras and vans (the program uses only one type of vehicle) are visible and the public is aware of their locations. In addition, photo radar sites are posted on the ITCU Web site.

While there is evidence that speeds at photo radar sites have decreased, there is also evidence that overall speeds in the province are returning to levels that existed before photo radar was introduced.

Many police officers believe that photo radar has done an effective job of reducing speeds at specific sites, but is not having a general deterrent effect because the public now recognizes photo radar vans and knows where they operate.

Police agencies believe that covert operations would effectively change driver behaviour provincewide because drivers could not predict when and where they would come in contact with a photo radar van. If drivers cannot easily determine whether a vehicle parked at the roadside is a photo radar vehicle, they will respond by reducing their speeds regardless to ensure that they are not ticketed for speeding.

### ***Other Jurisdictions***

#### **New Zealand**

In 1997/98, New Zealand examined whether or not operating their photo radar program in a covert manner would result in greater road safety benefits. The study concluded that the use of covert cameras, deployed at previously established photo radar sites, had a positive effect on public opinion and was a major contributing factor in the decrease of overall (not just photo radar site specific) open-road speeds and casualties.

However, there were also indications that the effectiveness of hidden cameras may diminish over time unless the rate of tickets issued to drivers is sufficiently high to maintain a high-perceived threat of being detected.

#### **Australia**

In Victoria, Australia, photo radar originally operated overtly but now operates both overtly and covertly and uses different types of vehicles in an effort to increase the perceived risk of apprehension. As well, photo radar operates not only in crash locations but also locations with an identified speeding problem.

#### **Europe**

A 1999 study on the effects and effectiveness of the use of speed cameras in the United Kingdom recommended reducing the visibility of roadside camera installations. The study, commissioned by government to make recommendations for best practices and deployment, indicated that "undermining drivers' confidence in knowing the location of fixed-site cameras may reduce manipulating and encourage more uniform lower speeds".

### **Random Deployment**

By limiting deployments to high-crash locations or sites that are identified by community concern, drivers quickly learn where cameras are located with minimal effect on overall driver behaviour.

It has been suggested that the deterrent effect of photo radar could be improved if deployments took place anywhere and at any time. This random deployment would be significantly different from the current policy of deploying photo radar only at high-crash sites or sites identified as a community concern (related to speeding).

Stakeholders such as BCAA believe, however, that photo radar, in some instances, operates at sites that do not have a serious crash or speeding issue and have expressed the view that this indicates to them that the program is a "cash cow". Random deployment might be seen as further evidence that revenue generation is a focus of the program.

There is no demand from police agencies in B.C. to operate photo radar in a random fashion. Rather, police support operating photo radar in an overt manner and adding camera units to improve program results.

### ***Other Jurisdictions***

Of the jurisdictions reviewed in the US, Europe and Australia, none deploy photo radar randomly. In all cases, photo radar is deployed in high crash locations or at locations with a speed problem.

### **Site Selection**

Photo radar deployment in B.C. is based on a policy that only sites with a crash history or where there is a documented concern from the community about speeding are to be considered for photo radar.

Sites are first identified by the local police, followed by an assessment undertaken by the regional ITCU field office. The ITCU field office must be satisfied that the site is worthy of photo radar enforcement.

It is unclear if local police are identifying sites that are appropriate for photo radar. That is, local police do not always have the skills and tools to determine which locations in their jurisdiction are high-crash locations. Further, local police often do not have the resources to thoroughly document site justification and as a result documentation differs from jurisdiction to jurisdiction in content, form, and usefulness. As a result, photo radar may be operating at some sites where speed is not the primary issue.

Although police do not have the resources to maintain and monitor crash data in their jurisdictions, police do submit police-attended crash reports to ICBC for compilation. ICBC's database of police-attended crashes should provide reports helpful to police in determining their crash picture.

To date, there have been problems both with the completeness of crash reports provided by police and, as a result, the usefulness of the data provided in return by ICBC. Consequently, police have not had access to



data that would assist in identifying sites that would benefit from the use of strategic enforcement such as photo radar.

### ***Other Jurisdictions***

#### **Australia**

In Victoria, Australia, speed camera enforcement locations are selected by Traffic Camera Program staff in conjunction with the local Community Road Safety Councils, and are enforced generally at the time of day and day of week with a crash/speed history.

### **Site Specific Strategic Deployment and Hours of Operation/Deployment**

According to the 1998 B.C. Traffic Collision Statistics casualty collisions involving unsafe speed more likely occurred on weekend days (Friday, Saturday, Sunday) than on weekdays. Nearly 49 per cent of unsafe speed-related injury collisions and 63 per cent of unsafe speed-related fatal collisions happened on the weekend.

Further, the greatest number of unsafe speed related injury collisions occurred between 3 p.m. and 6 p.m. with another peak between 10 p.m. and 11 p.m. The greatest number of unsafe speed-related fatal collisions occurred between 7 p.m. and 8 p.m. with another peak between 9 p.m. and 10 p.m.

ICBC has suggested that photo radar would be more effective if it were only operated at sites during times of high crash frequency or when speeding is at its peak.

As a requirement of the site selection process for photo radar, local police must develop an action plan for each suggested site providing direction for when photo radar should operate at specific locations. The intent is to identify the time of day and day of week when the crash/speed problem exists at a particular location so enforcement can occur at those times.

Action plans are usually followed. However, there are typically varying degrees of success in following action plans: in the Lower Mainland action plans are fairly well followed, but this is not the case, in all other parts of the province.

Action plans are affected by the distance that vans have to travel between the sites. In the Kamloops and Prince George regions, for example, there are many remote sites making it difficult to deploy at each site at the times local police have identified as needing enforcement. If specific times were adhered to, fewer deployments would result.

To address this issue, and assuming some enforcement is better than none

at all, efforts are focussed on trying to be at some locations at their problem times and to carry out other deployments in between.

The ability to follow action plans is also impacted by ITCU Field Office hours of operation. Each ITCU Field Office carries out two photo radar shifts a day and, in all but one case, shifts exceed a 10-hour duration.

**Table 1. ITCU Field Office Hours of Operation**

<b>ITCU Field Office</b>	<b>Shifts in a Day</b>	<b>Shifts</b>	<b>Hours of Operation</b>
Richmond (Lower Mainland)	2 - 12hr shifts	7 a.m.-7p.m. and 12 p.m.-12 a.m.	7 a.m.-12 a.m.
Victoria (Vancouver Island)	2 - 10hr shifts	6 a.m.-4 p.m. and 2 p.m.-12 a.m.	6 a.m.-12 a.m.
Kamloops	2 - 12hr shifts	6 a.m.-6 p.m. and 9 a.m.- 9 p.m.	6 a.m.-9 p.m.
Prince George	2 - 12hr shifts	6 a.m.-6 p.m. and 10 a.m.-10 p.m.	6 a.m.-10 p.m.

In all cases, hours of operation are extensive. However, the time taken to travel to locations, set-up and shut down deployments (equipment checklists and self-tests), and regular meal/coffee breaks reduces the number of hours available for deployments. In 1999/00, vans averaged 3.5 hours of deployment per shift.

The Photo Radar Program has an establishment of 109 officers, however, currently only 82 officers are seconded to the program at. Although efforts are made to ensure these vacancies have as little effect on the number of deployment hours, it has most likely reduced hours in some field offices.

### ***Other Jurisdictions***

#### **Australia**

In Victoria, Australia, speed camera enforcement locations are selected by Traffic Camera Program staff in conjunction with the local Community Road Safety Councils, and are enforced generally at the time of day and day of week with a crash/speed history.

## Number of Vans

Currently the B.C. program operates 30 photo radar vans at 1,297 sites. Table 2 shows the distribution of the vans by ITCU Field Office.

**Table 2. Distribution of Photo Radar Vans Provincewide**

ITCU Field Office	Number of Photo Radar Vans
Prince George	2
Kamloops	7
Victoria (Vancouver Island)	7
Richmond (Lower Mainland)	14

Based on the number of drivers in B.C. and their geographic distribution, when the program was introduced it was determined that approximately 30 cameras were needed to achieve widespread changes in speeding behaviour. Further, it was felt that introducing 30 cameras provided a balance between achieving certain road safety benefits without creating public opposition.

Currently, B.C.'s population is approximately 4 million. There are approximately 3.2 million registered/licensed vehicles, and approximately 2 million active drivers (there are 3.5 million drivers licensed but only about 60 per cent are active).

The police and ICBC have argued that 30 vans are too few to attain the desired crash reductions.

Currently, many high-crash sites do not receive photo radar enforcement. In an effort to provide photo radar to all interested communities, including some with comparatively small crash problems, many high-crash locations are not enforced due to too few vans.

### Stationary versus Mobile

Other jurisdictions with photo radar programs such as New Zealand and London, England, have found that mobile photo radar enforcement is complemented by the use of stationary units.

Stationary photo radar equipment has proven to be as effective as mobile equipment and provides other benefits as well. Some photo radar locations with significant crash histories might benefit from ongoing, uninterrupted enforcement from a stationary unit rather than the intermittent enforcement of a mobile unit. Also, cameras need not be housed in each installation to affect driver behaviour. As it is not apparent which sites contain a camera, all sites should see speed reductions, all of the time.

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Since stationary units can be operated unmanned, and cameras do not have to be purchased for every site there is the potential for significant cost savings over mobile units.

### ***Other Jurisdictions***

#### **Australia**

Victoria, Australia, has operated a photo radar program since 1989. The program operates 54 speed cameras at approximately 2,500 sites. These cameras are used mainly on arterial roads in both metropolitan (Melbourne) and rural areas, with the majority of deployments in the metropolitan area. In 1996, Victoria had approximately 3 million registered motor vehicles and 2.8 million licensed drivers.

#### **New Zealand**

New Zealand operates 31 photo radar vans at over 1,100 sites and 13 fixed cameras (unmanned) at approximately 70 urban locations. In 1994, New Zealand had 2.4 million motor vehicles and 3.5 million people. (Each camera operates 30 hours a week or 1,500 hours a year).

#### **United Kingdom**

London, England, uses a mix of mobile and stationary units. In 1997, 32 photo radar cameras rotated through 259 fixed camera sites. Additional mobile units are used to enhance general deterrent effects by signalling to drivers they could be photographed for speeding at locations other than the fixed sites.

### **Police Officer versus Civilian Operator**

Currently, police officers operate the photo radar vans. During Photo Radar Program development, it was decided that the cameras would be operated by regular police officers, at least until the Program's credibility was established. It was assumed that if the cameras were operated by non-police personnel (i.e. contracted commissionaires or government employees - "enforcement officers"), or operated automatically the integrity of the technology and the enforcement process might be challenged. Photo radar has now operated for more than three years in B.C. The program's legal status has been confirmed in the courts, including the use of certificate evidence.

The B.C. Automobile Association has suggested that civilian technicians should replace police officers in the photo radar vans. BCAA argues that highly trained police officers are not essential for the successful operation of photo radar equipment and should be returned to other policing duties that better use their specialized skills. Proponents of civilian technicians also contend that civilians would be less expensive to employ than police officers.



If civilian technicians were to be used to operate photo radar, their impartiality is key. That is, there should be no apparent or real conflict of interest (such as occurs if they are paid "per ticket"). As a result, civilian technicians would most appropriately be federal public servants hired through the RCMP under the provincial policing contract.

Federal public servants hired to replace police officers in photo radar vans are estimated to provide a cost saving, after applying the 70-per-cent cost-sharing formula, of approximately \$10,000 per position. As such, the difference in salary between civilians and police technicians would total a saving of \$830,000 for the province.

Although municipal police officers have always been seconded to the program, this practice would be impacted if civilians were introduced to operate the photo radar equipment. It is unknown what role municipal police could play in such a structure. The introduction of civilian technicians could negatively impact the support of photo radar by municipal police departments.

### ***Other Jurisdictions***

A majority of jurisdictions including, London, England, The Netherlands, New South Wales, Australia, Scottsdale, Arizona, and Beaverton and Portland, Oregon, operate photo radar programs that are both managed and operated by police.

#### **Australia**

Victoria, Australia, began its program using police officers. However, the Victoria Police have recently outsourced the operation of the speed and red-light camera programs to a private company.

#### **Canada**

In Calgary, Edmonton and Lethbridge, Alberta, special constables (commissionaires) operate photo radar vans. These civilian operators are under the direct control of the police who manage the operations of photo radar overall.

#### **United States**

San Jose, California, uses civilians (engineering technicians) employed by the Department of Traffic, to operate photo radar vans. The San Jose program operates without the participation of police. Public acceptance is high, likely in part, because the target of the program is speeding commuter traffic in San Jose neighbourhoods. Police retain responsibility for speed enforcement on highways using traditional radar.

#### **New Zealand**

Nearly half of the speed camera operators in New Zealand are civilians. Police in New Zealand indicate that they do not see a need for a sworn officer to operate the equipment.

## **Process Serving of Photo Radar Speeding Tickets**

Without specific deterrence, any enforcement activity would fail to achieve any real change in behaviour. For offences of a nature not serious enough to result in jail time, fines and other sanctions (i.e., demerit points, licence suspensions/ prohibitions) are used as deterrents to affect behaviour change. The Photo Radar Program relies on fines to deter speeding because driving penalty points cannot be assigned to a registered owner.

With the Photo Radar Program, a violation ticket is mailed to the registered owner of the vehicle photographed speeding as opposed to conventional speed enforcement where the officer personally serves the driver at the roadside.

The law requires that an individual is aware of a charge before they can be deemed convicted of an offence. As a result, if a registered owner does not respond to a mailed photo radar ticket, a copy must be personally served on the individual.

If a registered owner cannot be personally served, there is no proof the registered owner is aware of the offence and accordingly no action can be taken against the individual. The result is that the registered owner cannot be convicted for the photo radar speeding offence, no fine can be collected, nor any other action taken, to affect the registered owners' behaviour.

The police and ICBC believe the public is aware of this loophole, and that some registered owners are intentionally avoiding the service of their violation tickets. According to a recent report (*Evaluation Assessment of Photo Radar Program – Ference, Weicker and Company*), "approximately 29 per cent of the total number of photo radar tickets issued to date have not been paid because they have not yet been served to the owners of the speeding vehicles."

There is concern that the credibility and effectiveness of the Photo Radar Program has been reduced as result of the shortcomings in the personal service process.

## **Other Jurisdictions**

### **Australia**

In Victoria, Australia, a mailed notice of the offence, to the registered owner of the vehicle, is considered legally served.

## **Analysis**

Although operating overt deployments likely achieves reductions at high-crash locations, operating in an overt manner will not result in a long-



term, provincewide impact. Covert operations may improve program results by increasing the general fear of being caught and convicted.

However, if covert operations are introduced only at already established photo radar sites, drivers will continue to simply slow down at these locations rather than change their general driving behaviour. Covert operations must be introduced in conjunction with newly implemented sites and enough resources (i.e., additional cameras) to ensure that sites can be adequately enforced.

Perhaps even more important than covert operations, a critical mass of photo radar coverage is required to achieve general deterrence. That is, the public needs to believe that enough cameras are in operation they will be caught if they speed. The current complement of 30 photo radar vans may not be adequate, especially in light of the fact that Victoria, Australia, has 54 photo radar units to police approximately the same number of vehicles as B.C. but in a smaller geographical area.

A joint deployment of fixed and mobile photo radar cameras may provide a more efficient use of resources rather than using fixed or mobile photo radar cameras exclusively.

Another important element of deterrence is about punishment. If no real punishment results from an offence, a change in behaviour cannot be reasonably expected. Photo radar is effective in dealing with 70 per cent of registered owners who receive tickets. Although another 30 per cent are not punished because they cannot be served legally, their speeding behaviour may still change because they do not want to be captured by photo radar again. Regardless, the credibility of the Photo Radar Program is impacted if the public knows that some portion of the public who should receive a photo radar ticket do not because of a loophole in the legal model.

In addition to a strong deterrence effect, ensuring that enforcement targets problem locations is important to the effectiveness of photo radar. Statistics show that trends do exist regarding the time crashes occur. Strategic deployment based on the time of the day or the day of the week appears to be another way to achieve greater speed and crash reductions.

The Photo Radar Program would benefit from better crash data. Both ITCU staff and local police would be better able to determine appropriate sites for photo radar enforcement and the times at which to operate. In addition, proof of greater use of crash data would improve public and stakeholder confidence in the program.

The use of civilian technicians in photo radar may reduce program legitimacy in the eyes of the public. Such a move may diminish the perceived seriousness of a photo radar speeding offence. However, it does allow the return of police officers to other police duties, and provides cost savings.



## **C3 INTERSECTIONS**

In 1998, 88 people died and 8,000 were injured in crashes at intersections in B.C.

Traffic patterns at intersections create many opportunities for collisions. The risk of crashes increases when drivers do not observe the rights of way for other vehicles, cyclists and pedestrians. Moreover, intersection enforcement can be difficult for police.

<b>Public View:</b> 90 per cent cite running a red light or stop sign as an extremely serious or serious offence.	<b>Police View:</b> Three-quarters feel enforcement at intersections is a highly effective way to improve traffic safety. One third rate intersection offences as a high or very high priority and feel intersection violations are a major contributing factor in 70 per cent to 80 per cent of crashes.
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In 1998, B.C. police issued 8,874 tickets for not obeying traffic signals; 8,466 for not stopping at a red light; 4,550 for not stopping at a yellow light.

### **Red-light Cameras**

In 1999, B.C. launched the Intersection Safety Camera Program, which combines red-light camera enforcement at high-density, high-crash intersections and public education. The goal of the program was to reduce the number of intersection crashes and fatalities.

Local police, on behalf of their community, recommend sites to the Integrated Traffic Camera Unit (ITCU). Before a site is approved for camera installation, police from the ITCU confirm that collision problems are a result of red-light violators, not engineering or structural problems. In June 2000, B.C. had 17 red-light cameras operating at intersections across the province. By 2001 there will be 30 cameras rotated among 120 sites.

A red-light camera system is connected to the traffic signal and to loop sensors located in the road surface at the crosswalk or stop line. Registered owners receive a ticket if their vehicle enters the intersection after the light has turned red and continues through it.

There are highly visible signs posted near the intersection where the cameras are located to alert drivers and to encourage compliance with traffic laws.

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***To what degree should B.C. use technology to enforce traffic laws at intersections?***

**1. Enforcement and Engineering**

Red-light cameras allow 24-hour enforcement at high-crash intersections. However, the technology is expensive and can monitor only one direction of traffic. It is especially important, therefore, to target locations where serious crashes are caused by red-light violators.

Conventional enforcement is more flexible and immediate, but it can be dangerous because police officers must follow offenders through the red light or stop sign. The most effective and safest way to enforce traffic laws at intersections without using cameras involves one officer who spots violators and relays the information to a second officer on the other side of the signal who stops the vehicle and issues the ticket.

Most intersection offences – such as failing to stop at a yellow or red signal or failing to yield to a pedestrian or vehicle – result in a \$144 ticket and two demerit points. Red-light camera tickets result in the same fine, but there are no demerit points.

To help identify the most appropriate techniques to reduce intersection crashes, police managers can assign officers to take on responsibility for specific high-crash intersections and ask them to find ways to address traffic safety problems occurring at the site. The response could be enforcement or other solutions, including engineering improvements or a selective traffic enforcement program (STEP) that brings together enforcement and public/police awareness. Sometimes signs are posted at high-risk intersections or the news media are advised so they can alert drivers.

***Other Jurisdictions***

**England**

In Essex, England, police reported an 88-per-cent reduction in injury crashes after introducing four red-light cameras rotating among 12 sites in 1992.

**United States**

The Insurance Institute for Highway Safety (IIHS) reported that red-light cameras are currently being used in 37 U.S. cities, and the number is growing. Maryland has 75 red-light cameras and plans to expand this to 200.

The IIHS recently conducted random telephone surveys in 10 U.S. cities, five with red-light cameras and five without. It found that 80 per cent of drivers in cities with cameras supported them and felt there was a greater chance of being ticketed for a red-light offence. In cities without cameras, 76 per cent of drivers supported them.

Camera supplier U.S. Public Technologies reported that red-light violations dropped at camera enforcement sites by 40 per cent in San Francisco (after six months) and 92 per cent in Los Angeles.

In Richardson, Texas, police and the engineering department developed a "downstream" light system. A white light installed on the back of a traffic signal activates when the signal turns red so a police officer can park downstream and know when the signal has changed. During a two-day enforcement period, officers issued 300 citations for red-light running, more than 70 per cent as a result of the downstream lights. Local judges were shown how the system works and endorsed it.

#### **Australia**

In South Australia, police reported a 33-per-cent reduction in serious right-angle crashes and an increase in rear-end crashes after introducing red-light cameras in 1988.

An Australian study found that drivers are more likely to change their behaviour if they expect they will be caught, and this is best achieved with high police visibility, penalties, automated enforcement systems such as red-light and speed cameras, and a perceived random and unpredictable element in enforcement.

#### **Analysis**

The goal of intersection enforcement is to change driver behaviour at specific high-risk intersections as well as to offer general deterrence. While it is too early to draw any conclusions about the use of red-light cameras in B.C., results from other jurisdictions are promising.

The Insurance Institute for Highway Safety in the United States says red-light cameras are a deterrent because drivers worry more about getting a ticket than the likelihood of being involved in a crash. The institute found that cameras reduce red-light running at intersections where cameras are deployed with a spillover effect at nearby intersections where they are not in use.

B.C. is increasing the visibility of its red-light camera program by posting signs at sites and in strategic locations across the province to alert drivers to the camera enforcement. It will also rotate cameras and less expensive data collection units among sites.

Enforcement, however, is not always the solution. If police find an intersection design is leading to traffic congestion and driver impatience, they can refer the issue to the local municipal engineering department or the Ministry of Transportation and Highways.

In the United States and other countries, roundabouts or traffic circles have achieved 50- to 90-per-cent reductions in collisions compared with intersections using a two- or four-way stop or traffic signals. Traditional



intersections create a high potential for right-angle, left-turn and rear-end conflicts. Roundabouts allow all vehicles to move continuously through intersections at a low speed and eliminate crash opportunities. If a collision does occur, it is at a lower speed.

ICBC, the Ministry of Transportation and Highways, the B.C. Transportation Financing Authority and municipal governments support engineering improvements at high-risk locations, such as installing turn lanes or increasing traffic signal visibility.





## **C4 OCCUPANT RESTRAINTS**

In 1998, close to 80 per cent of drivers who were not wearing seat belts and were involved in crashes in B.C. were injured or killed. In comparison, only 50 per cent of those who were properly restrained were injured or killed.

Motor vehicles are designed with a "life space" to protect occupants from any type of collision – front, side, rear or rollover. When a vehicle crashes, it stops nearly instantly and an unbelted person inside continues moving until they hit the windshield, dashboard, steering wheel -- or another vehicle occupant. Occupants are three times more likely to die if they are ejected from the vehicle.

Transport Canada estimates that since 1989, the increased use of seat belts resulting from legislation, enforcement and public education has resulted in an estimated 3,400 lives saved in Canada, 77,000 injuries avoided and \$6 billion in social and health costs saved.

Since 1971, seat belts have been required in all new vehicles in Canada. Changes since that time have made them more comfortable and convenient. Transport Canada reported that in June 1999 slightly more than 90 per cent of all occupants of all light-duty vehicles (passenger cars, passenger vans and light trucks) were using seat belts. B.C.'s rate was reported to be 89.2 per cent.

Seat belt wearing rates are believed to be lower in interior and northern rural areas of B.C. An ICBC regional survey in 1999 found that the wearing rate was 80 per cent in the Kootenays. Further, a review of fatal crashes in B.C. from 1997 to 1999 showed that while a third of the people killed provincewide were not wearing seat belts, the number was almost 60 per cent in rural areas.

The National Occupant Restraint Program's 2000 annual monitoring report indicates there is growing interest in the issue of seat belt use in rural areas of Canada.

Alberta surveyed wearing rates as part of a provincial study of traffic services and found it was 69 per cent – while Transport Canada reported the provincial rate was 89 per cent.

Transport Canada data also shows that wearing rates for occupants of light trucks are lower – in B.C. 73.3 per cent of light truck occupants wore seat belts in 1999.

<b>Public View:</b>	<b>Police View:</b>
A third say seat belt offences are not a high priority, a third say they are a low priority and a third say they are a medium priority.	Half view occupant restraints as a low or very low priority for enforcement.

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***Is increased seat belt enforcement the most effective way to encourage the use of occupant restraints or are there better ways?***

### **Legislation, Enforcement and Public Education**

Legislation may increase use of seat belts and child restraints, but it needs to be enforced with appropriate sanctions. There must also be continued public awareness so both vehicle occupants and police understand the value of occupant restraints in saving lives and preventing injury.

When Transport Canada compared occupant fatality trends in Canada and the United States from 1975 to 1997, it found that Canada, which had more aggressive occupant restraint laws, achieved a substantial drop while rates in the United States increased slightly.

B.C. introduced legislation in 1977 making seat belts and child restraint systems mandatory. Only one month later, the wearing rate had risen to close to 70 per cent from about 30 per cent. Continued enforcement and public education since then has resulted in a steady increase, reaching close to 90 per cent of all vehicle occupants in urban B.C. in 1998. However, that wearing rate is based primarily on urban surveys.

All Canadian provinces and territories, police services and other road safety agencies participate in the National Occupant Restraint Program (NORP), the goal of which is to increase national seat belt usage rate to 95 per cent of all light-duty vehicles by constantly strengthening provincial and territorial laws and sanctions and maintaining enforcement and public education activities.

Another program is Operation Impact, which attempts to raise awareness of all traffic services through national and local media events and community awareness activities. A primary focus has been occupant restraints.

Operation Impact is an annual 24-hour national campaign sponsored by the Canadian Association of Chiefs of Police. Started in 1991 as an enforcement program, it has improved and expanded its education and awareness elements since then. Its most recent focus is high-risk drivers, recognizing that these drivers tend to have lower seat belt wearing rates and are more likely to be involved in a collision.

Operation Impact is an example of a selective traffic enforcement program, or STEP, which identifies a specific enforcement activity and responds with highly visible enforcement and public/police awareness. A STEP usually starts with police training and a pre-survey, then kicks off with a news conference followed by enforcement activities and a follow-up announcement showing results.

Coinciding with Operation Impact, B.C. police agencies, the Ministry of Attorney General and ICBC conduct an annual one-week seat belt enforcement and education campaign each October.

In 1998, B.C.'s campaign focused on the proper use of child restraint systems. Police checked 71,106 vehicles. They issued 2,891 seat belt tickets and 34 warnings, 106 child restraint tickets and 22 warnings. In 1999, 80,642 vehicles were checked during the seat belt campaign with 3,297 seat belt tickets and 1,124 warnings, 45 child restraint system charges and 82 warnings.

In 1998, police agencies in B.C. issued 40,000 tickets for seat belt violations. The fact that almost 10 per cent of the seat belt tickets were issued during the one-week program suggests more enforcement is possible and needed.

Police agencies are taking creative approaches to enforcing seat belt laws when faced with limited resources. In 1998, Boston Bar RCMP conducted a roadcheck with student volunteers from a high school CounterAttack program and New Hazelton RCMP added child restraints as a focal point in regular roadside checks because they did not have enough officers to conduct a special campaign.

### ***Other Jurisdictions***

#### **Canada**

In Newfoundland, the wearing rate increased to 69 per cent in 1982 from nine per cent in 1981 when seat belt use became mandatory with a \$50 fine.

As part of a traffic services pilot project involving the Traffic Committee of the Canadian Association of Chiefs of Police and the RCMP in 'K' Division in Alberta, a rural seat belt survey was completed in rural Alberta in June 1999. There was a sense that the generally urban-based surveys conducted by Transport Canada were not an accurate reflection of the seat belt wearing rate in rural areas of the province. The RCMP, in partnership with regional health units, Transport Canada and the Alberta Centre for Injury Control and Research, conducted a provincewide survey of communities with a population of less than 25,000. They found the seat belt wearing rate was 69 per cent in rural Alberta, compared with 89.3 per cent in the Transport Canada survey.

#### **United States**

The U.S. National Highway Traffic Safety Administration (NHTSA), which currently provides grants to police associations for innovative seat belt enforcement programs, announced in the fall of 1999 that it also plans to provide grants to help metropolitan law enforcement agencies work with local communities to increase the use of occupant restraints.

In addition to these grants, NHTSA provides funds to help states implement new primary seat belt laws (whereby a seat belt ticket can be issued alone and does not require another offence). NHTSA believes the most effective way to increase seat belt use is to upgrade use laws to allow for standard enforcement: reporting that three states (California, Louisiana and Georgia) increased seat belt use by 15 percentage points when they recently upgraded their laws.

Elmira, New York, achieved the highest seat belt use ever in the United States in 1999 after an intensive three-week publicity and enforcement campaign, which included a week of public education and two weeks of road checks. The rate rose to 90 per cent from 63 per cent.

North Carolina initiated a multi-year enforcement and publicity campaign in 1993 that targeted seat belt use, impaired driving and high speeds. It raised awareness of the importance of seat belts, leading to an increase in the wearing rate to 81 per cent from 64 per cent.

Modesto, California, launched a comprehensive traffic safety program in 1997 with emphasis on occupant restraints after finding that 44 per cent of the people killed and a quarter of those injured in motor vehicle crashes were not wearing seat belts. City police traffic unit concentrates exclusively on seat belt enforcement for three hours twice a month, with zero tolerance for offenders. They also set up checkpoints to increase seat belt compliance and organized a community-based committee to develop a public information and education campaign.

### **Europe**

The Commission of the European Communities focused on seat belts and child restraints in a five-year action program started in 1997 to improve road safety and reduce fatalities to 27,000 from 44,000. One Europe-wide campaign in 1998, called "10 seconds that can save your life", promoted four simple actions – wearing a seat belt, placing children in a proper child restraint system, adjusting the seat and head restraint and stowing loose luggage in the trunk. The commission also worked with a television station to produce three short videos aimed at educating youth on the themes of seat belt wearing and impaired driving. It anticipated that the advertising along with legislative reform could reduce potential fatalities by 800 a year.

The Swedish National Road Administration is researching seat belt interlock systems that force drivers to buckle up before their cars start. This is part of a move toward making intelligent transportation systems mandatory for Swedish cars.

### **Sanctions (Fines and Demerit Points)**

Seat belt laws are of limited effect without adequate enforcement and strong enough sanctions. Police in B.C. can enforce occupant restraint infractions with a violation ticket, a written warning or a verbal warning.

In B.C., occupant restraint offences – such as not wearing a seat belt, operating a vehicle without proper seat belts or not using a child restraint system – can lead to an \$86 ticket (\$75 fine plus 15 per cent victim surcharge). While this is similar to the range in most other provinces and territories, B.C. is one of five Canadian jurisdictions that does not assess demerit points in addition to the fine. Since demerits go on the driver's



record, they may be a stronger deterrent than a fine, especially a fine that is lower than most other traffic offences.

Both the public and police share the view that seat belt offences are not as serious as other traffic offences. However, statistics show that seat belts not only prevent deaths and injuries, but they increase the chances that a driver can maintain control of a vehicle in an emergency.

With this in mind, it is not surprising that respondents to the study's police perception survey indicated they would more likely issue a speeding ticket than a seat belt ticket if they stopped a vehicle exceeding the speed limit and found the occupants were not wearing seat belts. Eighty per cent of the police responding to the survey said they would issue a speeding ticket; 35 per cent said they would also issue a seat belt ticket to the driver, and only 14 per cent said they would issue seat belt tickets to all unbelted occupants.

Seat belt offences might be viewed more seriously by police and the public if the fines were higher and were accompanied by demerit points, as is the case with other serious traffic offences.

### ***Other Jurisdictions***

#### **Canada**

In Prince Edward Island, the seat belt wearing rate was 65 per cent in 1990. In 1994, the province increased fines to \$60 from \$35, removed exemptions and introduced demerit points. The usage rate rose to 90 per cent. It was 88.5 per cent in the June 1999 national seat belt survey.

In Newfoundland, the wearing rate increased to 84 per cent in 1990 from 69 per cent when demerit points were added, it rose again to 95 per cent in 1992 as a result of enforcement and public education through STEP's. This rate has since dropped to 82.5 per cent in June 1999.

### **Seat Belt Exemptions**

It is more difficult to enforce seat belt laws if drivers are able to claim they are exempt from seat belt use for a variety of reasons.

B.C. currently allows a number of seat belt exemptions, including for:

- medical reasons or because of a person's size, build or other physical characteristics – these require a certificate from the Superintendent of Motor Vehicles signed by or on recommendation of a medical practitioner;
- work activities that involve speeds not exceeding 40 km/h and frequent stops that require continual alighting and boarding of the vehicle (e.g. mail or newspaper delivery); and
- driving a motor vehicle in reverse, which is generally done at low speeds and can be awkward in older cars without retractable seat belts.



The Canadian Council of Motor Vehicle Transport Administrators (CCMTA) issued a discussion paper in the early 1990s that said exemptions discourage seat belt compliance and that the benefits of use far outweigh physical discomfort or medical considerations. It found that more people are likely to abuse exemptions when police increase seat belt enforcement and that employees who are exempt at work are more likely not to wear a seat belt when they are away from work. The B.C. Association of Chiefs of Police Traffic Safety Committee has recommended removing exemptions for taxi drivers, who currently do not have to wear a seat belt if they are travelling less than 78km/h.

The CCMTA recommended that provinces remove all exemptions except when a person is driving in reverse, for antique vehicles and for passengers in a vehicle where the seat belts are all in use.

### ***Other Jurisdictions***

#### **Canada**

The National Occupant Restraint Program reports that Prince Edward Island and Saskatchewan are planning to remove all medical exemptions for seat belt use and the Northwest Territories is planning to remove all exemptions. Other provinces are also considering changes to exemptions.

### ***Analysis***

Seat belt systems are the single most important protective mechanism available to adult vehicle occupants. Correct use of a lap/shoulder belt system reduces the likelihood of death in a motor vehicle crash by 50 per cent.

The seat belt wearing rate has increased steadily since seat belts became compulsory, however, almost one in 10 drivers is still not buckling up and this rate is higher in some regions of the province. The profile of drivers who are not wearing seat belts generally shows they are more likely to be involved in a collision than belted drivers.

While enforcement is an effective way to increase the wearing rate, studies show that it is most effective to combine education/enforcement with legislative changes such as fewer exemptions and the addition of demerit points or higher fines. Enforcement would also be more effective if front-line police recognize the risk drivers and passengers face by not wearing a seat belt and if B.C. had a more accurate picture of seat belt wearing rates, especially in rural areas, and the impact on the severity of injuries.



**Table 3. Seat Belt Chart**

<b>Jurisdiction</b>	<b>Fines ( + surcharge)<sup>1</sup></b>	<b>Points for non-use of seat belt<sup>1</sup></b>	<b>Estimate of seat belt use in June 1999<sup>2</sup></b>
Alberta	\$50 (\$7)	0	89.3
British Columbia	\$75 (\$11)	0	89.2
Manitoba	\$69 (\$5)	0	85.3
New Brunswick	\$84 - \$1,000	1	85.9
Newfoundland	\$45 - \$100	2	82.9
Nova Scotia	\$78.75	2	86.6
Northwest Territories	\$50	2	61.1
Ontario	\$90 (\$20)	2	91.0
Prince Edward Island	\$100 (\$10)	0	88.5
Quebec	\$80 - \$100	2	93.0
Saskatchewan	\$75	2 (new drivers)	88.2
Yukon	\$40	0	82.1

1 From the National Occupant Restraint Program annual monitoring report, May 2000

2 From the Transport Canada Survey of Seat Belt Use in Canada, June 1999

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1 From the National Occupant Restraint Program annual monitoring report, May 2000

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## **D. How to Comment**

The intent of the Traffic Services Study is to identify effective opportunities and measures to improve traffic services and community safety in British Columbia, with a particular focus on how police deliver traffic services. As traffic safety is an important public policy area, it is essential to seek a broad range of views on these issues.

The steering committee will carefully consider all comments received. It will evaluate the benefits and advantages as well as the impacts and risks of all the opportunities and measures identified.

Your comments will help to strengthen the final report and recommendations that will be presented to the Attorney General at the end of September. The goal is to present the most promising and practical ways to make traffic services in B.C. as effective and efficient as possible.

To help focus your comments and feedback, here is a list of several questions being asked. Please feel free to address any others you feel should be included.

- Is CounterAttack the best strategy to deter impaired driving? Are there other ways police can reduce the number of crashes involving impaired drivers?
- Does enforcement focus too much on speed?
- Are there other driving behaviours that need to be addressed?
- Is photo radar an effective part of B.C.'s overall traffic enforcement strategy?
- Is increased seat belt enforcement the most effective way to encourage the use of occupant restraints or are there better ways?
- Should road safety education play a greater role in traffic service delivery?

Thank you for your interest in helping to make B.C.'s roads and communities safer and for taking the time to provide your comments.

Provide written comments to the **Traffic Services Study** by Aug. 18, 2000 to:

**e-mail:** [trafficstudy@ag.gov.bc.ca](mailto:trafficstudy@ag.gov.bc.ca)

**fax:** (250) 387-0103

**mail:** P.O. Box 9206 Stn. Pro. Govt, Victoria BC V8W 9J1

For further information, call (250) 387-0118 in Victoria.

## **E. Appendices**

### **APPENDIX I**

#### **Traffic Services Study Activities to Date**

The Traffic Services Study, a review under the *Police Act*<sup>1</sup>, began in late fall 1999, with the goal of improving public and community safety by recommending strategic improvements to traffic services.

The study is being undertaken by a core project team, which includes representatives seconded from RCMP and independent municipal departments. A steering committee provides advice and guidance, reviews draft documents and consults with key stakeholders. The steering committee members are Ken Higgins, retired deputy chief of the Vancouver Police Department, and Diana Butler, former mayor and chair of Oak Bay's police board.

The study has established partnerships with the B.C. Association of Chiefs of Police, police agencies, ICBC and the B.C. Injury Research and Prevention Unit to gather and analyze data and to confirm the accuracy of the information received.

##### **Information gathering and analysis**

To determine the scope and magnitude of traffic safety problems in B.C., it is necessary to understand both what is causing the most serious crashes and how traffic services are currently being delivered. The Traffic Services Study gathered this information by:

- reviewing collision causation;
- conducting an environmental scan of police traffic services;
- surveying both police and the public; and
- consulting with police and key stakeholders.

The study team, with the help of police agencies, ICBC and the B.C. Injury Research and Prevention Unit, is analyzing all police-reported fatal, injury and property crashes for 1997, 1998 and 1999 to identify what factors were involved in the most serious collisions and to develop a profile of crashes. This data analysis will be provided in the final report.

As part of the environmental scan, the study asked B.C. police agencies for detailed information about how they delivered traffic services in 1998.

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<sup>1</sup> The *Police Act* confers specific duties and responsibilities regarding the delivery of police services on the Attorney General. Under section 42 of the *Police Act*, the director of police services has the authority to study, investigate and prepare a report on policing, law enforcement and crime prevention in B.C.

Information was received from all RCMP detachments, the 12 independent municipal police departments and the Integrated Traffic Camera Unit. The information included:

- personnel -- authorized and actual strengths in both the detachment/department and in dedicated traffic services;
- specialized training (e.g. crash investigation, drug recognition, commercial vehicle enforcement) provided to both general duty/patrol officers and to traffic officers;
- equipment, such as vehicles, radar units and breathalysers -- both what the agencies have and what they need; and,
- traffic-related data to identify number and type of charges and violation tickets generated by each police agency, including Criminal Code charges and Motor Vehicle Act violations.

The study also looked at funding provided for traffic services by federal, provincial and municipal governments and ICBC.

The study is conducting a literature review to determine what is being done and what is working best in other jurisdictions in North America and around the world.

The study team has been working in collaboration with the National Traffic Study, an initiative of the Traffic Committee of the Canadian Association of Chiefs of Police, RCMP Headquarters and RCMP 'K' Division in southern Alberta. The project is developing a model for delivery of quality traffic services using an analytical problem-solving approach.

## **Consultation**

### **Police**

A survey was sent to all operational B.C. police officers in December 1999 via their department or detachment to invite their thoughts and perceptions of traffic safety, collision causation and the level of importance traffic safety plays within the police community. A statistically representative sample of 22 per cent of the questionnaires (1,564) were returned.

Focus group work sessions were held in March 2000 with members of the B.C. Association of Chiefs of Police Traffic Safety Committee at their annual general meeting. The objective was to explore their perceptions around their ability as traffic officers to influence road safety and the impact their work has on community safety.

The study has issued a regular newsletter to police to keep police and stakeholders informed of its activities and to encourage feedback. There have been regular presentations to the B.C. Association of Chiefs of Police (BCACP) as well as regular conference calls with the chair and co-chair of the BCACP Traffic Safety Committee.



## **The Public**

The study commissioned Pollara, a research company, to conduct a telephone poll of 803 British Columbians from across the province between January 26, and February 3, 2000. The primary objective of the study was to determine public attitudes to traffic law enforcement and education in B.C.

The interviews were conducted with a randomly selected sample of British Columbians, 18 years of age or older. The margin of error for the total weighted sample of 800 is  $\pm 3.5\%$ , 19 times out of 20.

This included:

- identifying driving behaviours the public views as the most dangerous;
- identifying when and how they believe police should enforce traffic laws;
- identifying who is responsible for traffic law enforcement and for what purpose; and
- measuring the importance of traffic safety when compared with other public safety concerns.

## **Key Stakeholders**

The steering committee members have met with representatives from the B.C. Automobile Association, Union of B.C. Municipalities, B.C. Trucking Association and B.C. Association of Police Boards to identify and discuss key issues and possible solutions.

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